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ABSTRACT

A model career education program for physically disabled students in grades K through 12 was designed, implemented, and evaluated at Human Resources School (HRS), a school for the physically disabled, in Albertson, New York. The major objectives of this program are to enhance development of students' self concept, decisionmaking ability, and career maturity. The elementary program consists of four components: teacher developed curriculum, speakers' bureau, simulated business and work experiences, and field trips. The secondary program focuses on preparing students to assume a more active role in exploring career interests through five sequential components: a career guidance course, prevocational evaluation, observation of Human Resources Center (HRC) employees, paid work experience with HRC, and paid work experience in private businesses, hospitals, government agencies, and schools. A pre/post and postdelayed testing schedule of HRS students was conducted using three standardized instruments, reflecting the three objectives of the program. Among results were that HRS high school students became significantly more internally controlled in the interval between pre- and posttesting, and that HRS students in grades 7 and 8 developed more positive self concepts and became more independent in making career related decisions though not as career mature as nondisabled students. (Author, DB)

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A CAREER EDUCATION PROGRAM FOR
STUDENTS WITH PHYSICAL DISABILITIES

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An extensive career education program has been developed at Human Resources Center. The focus of this program is on the severely physically disabled. The program focuses on the three themes of improving and maintaining a positive self concept, building decision-making skills as they relate to independence and broadening the student's career awareness. The following material summarizes the philosophical orientation of Human Resources School's Career Education program:

1. Career Education must be thought of in terms of career development if it is to have any lasting appeal to researchers and practitioners in the field of education.
2. The developmental process is individual and is affected by the experiential base of the individual.
3. The cultural base of physically disabled individuals differs from that of the able-bodied and must be understood if a relevant intervention program is to be designed.
4. A career is a life style in that it reflects the values and assumptions that stem from membership in various groups and the sharing of the customs and mores of these groups.
5. A range of life style exists for both able-bodied and disabled individuals and this range extends from paid employment through life styles that do not include paid employment.
6. The range of options open to the disabled is limited by variables that are part of the structure of society and/or the nature of the disabling condition.

7. Reasoned choices of life styles and the assumption of responsibility for these choices by the individual are essential for that person to achieve a sense of satisfaction through his/her career choices.
8. For the emerging adult who is physically disabled, this sense of control over one's destiny is of special importance as a means of stemming psychological dependence which may be an outgrowth of physical dependence.
9. The overall goal of education in general and educational programs in career development in particular is to direct the individual toward self actualization.
10. A person with a severe physical disability, once the medical crisis is under control, must assume the primary responsibility for managing his/her disability and that such management is primarily a personal matter and only secondarily a medical matter. (Palmer, 1980).

These general perspectives should be kept in mind as the reader progresses through the sections of this report describing the Elementary program, Secondary program and the Evaluation component.

The Elementary Program

The Elementary Career Education program at Human Resources School, consists of four components: teacher-developed classroom curriculum, a Speakers' Bureau, Field Trips, and Classroom Business Ventures. Each component is designed to provide students with

different methods of gathering information and developing skills that promote the three program themes of developing:

positive, realistic self-concept
decision-making capabilities
career awareness.

Competencies have been developed for each component which serve as implementation guidelines for teachers and students and form part of the evaluation process. Secondary students also partake in the Speakers' Bureau, Business Ventures and Field Trips, but these components do not form the basis of their career development program.

1. Teacher developed curriculum

Human Resources School teachers developed math, English social studies, and science lessons which incorporate the above program themes. For example, a typical K-3 grade career awareness social studies lesson may have students identify jobs done by members of their family. A 4-6 grade self concept science lesson might be to have students identify physical characteristics they have which are similar to those of others in their family.

For evaluation and refinement purposes, teachers complete a classroom curriculum data form for each lesson, indicating the lesson's objective, materials used, relation (if any) to other career education components, time length, and comments.

Lessons are carried out at least twice a month. Most lessons involve teacher-developed materials as opposed to commercial materials, and are approximately 30 minutes in duration.

2. Speakers' Bureau

The objectives of the Speakers' Bureau are to provide students with positive role models, continual opportunities to develop and practice interviewing techniques, and a means of obtaining first-hand occupational information. Though not conceived as a specific objective, a positive by-product of the Speakers' Bureau is that it encourages employers to perceive students with disabilities as future workers.

Speakers are scheduled once a month for grades 4-6, 7-8, and 9-12. During the 1979-80 school year, 23 speakers, 15 of whom had disabilities, spoke to the students about their work and its effect on other aspects of their lives. Speakers have included a photographer with a visual impairment, a karate instructor for persons with disabilities, and a sportswriter from a local newspaper.

The research staff conducts ongoing formative evaluation of the Speakers' Bureau by recording all questions students ask at each session and categorizing them according to level of sophistication.

3. Classroom Business Ventures

These are projects that students plan, implement and evaluate according to guidelines developed by the research staff for this component. A newspaper recycling project, plant sale and wheelchair repair shop are among the business ventures that have been operated by the students.

The planning, implementation and evaluation process assist students to:

learn business vocabulary and procedures ("loan, investment, gross income, net profit"); gain practice in different jobs, such as advertising, production and accounting. Thus, they can test their skills and assess which aspects of jobs they like and dislike;

learn social skills that are appropriate for a work environment, as opposed to a school environment. For example, learning to work with someone you may not like in order to complete a job task.

4. Field Trips

Learning how to get from one place to another is vital for students for whom conventional transportation is often inaccessible. Map reading, identifying and locating accessible transportation, and determining travel time and cost are necessary skills for independent living. Arranging trips to accessible worksites such as a local department store, restaurant, and government office buildings enables students to develop these skills and to observe the characteristics of various work environments and some of the job tasks that employees perform. For example, senior high girls took two trips to local department stores. In one store they noted that the dressing rooms were inaccessible, and in the other store the snack shop was inaccessible. However, salespeople were most helpful. The students phoned a nearby ice-cream parlor to find out whether it could accommodate six people in wheelchairs and found that because they had given advance notice, the manager would make the necessary arrangements.

The Secondary Program

The objective of this program is to move high school students with physical disabilities toward greater independence and responsibility by helping them bridge the gap between school and the world of work.

Research has indicated that exploration is a major component of career decision-making and vocational development. Theorists such as Super and Jordaan (1973) emphasize the positive impact of occupational exploration and work exposures on the successful transition from school to work. In addition, studies have shown that young people who have not been involved in remunerative work display a retarded work development. (Rusalem, 1969) Because most young people with physical disabilities have been experientially deprived due to their lack of mobility and perhaps, limited physical capacities, and because many of them have not held the types of jobs common to their able-bodied peers (paper routes, baby sitting), it is especially important for them to be encouraged to participate in a variety of school and community work experiences.

The Secondary Career Preparation program consists of four major components: career guidance course; shadowing; paid work experience within the Human Resources Center; and paid work experience within the community.

Career Guidance Course

The purpose of this course is to increase the students' career awareness as well as their communication and decision-making skills. In grade nine the program deals with group interaction

activities. Eight one-hour lessons concentrate on the personal skills necessary to facilitate communication within a group. The eight lessons in grade ten focus on decision-making and creative problem solving activities. In grades eleven and twelve the course becomes individualized and the students are provided with specific career information and trained in job-seeking skills (i.e., resume writing, interviewing skills, etc.).

2. Shadowing - The aim of our shadowing program is to provide students on-site exploration of their job interests and potential in several different work environments and occupational fields. Such observations help students determine their actual interest in and aptitude for the occupation being explored. In addition, they are exposed to various worker attitudes. Students are supported in their exploration of some jobs they are unable to perform so as to be in a better position to realize their limitations as well as their capabilities. Shadowing occurs in the 9th and 10th grades and students are allowed to observe and interview employees within the Human Resources Center over a period of two weeks.

3. Work Experience Within the Human Resources Center - The majority of the students are ready for a controlled work experience after shadowing. These jobs provide for close supervision and training to give the students an opportunity to learn acceptable work attitudes and habits in a non-threatening environment. Forty-five severely physically disabled students have held paying jobs at the Human Resources Center over the last three years.

4. Community Work Experience - Finally, when students have demonstrated social maturity and have acquired minimal vocational

skills, they are given the opportunity to participate in community work experiences. So far, we have had two severely physically disabled students employed in community positions.

Evaluation

The evaluation component of the Human Resources School Career Education program focused on assessing students' development in the three areas which form the guiding themes of the program: fostering a positive, realistic self-concept, developing independence, and enhancing career awareness. Thus, the major hypothesis of the program is that physically disabled students who have experienced an integrated career education will have higher self-concepts, be more internally controlled and have greater career maturity than physically disabled students who have not experienced a career education program. In addition to this major hypothesis, a second hypothesis was posited: Severely physically disabled students who have not experienced a career education program will have lower self-concepts, be more externally controlled, and be less career mature than less severely physically disabled students. To test these hypotheses both summative and formative evaluation methods have been implemented.

Sample

The subject group of this research project is the entire student population of Human Resources School (HRS), in Albertson, New York. It consists of approximately 230 K-12 grade students all of whom have physical disabilities. Cerebral palsy, muscular dystrophy and spina bifida represent the predominant

disabilities of students in the school. Fifty-four percent of the students are wheelchair-bound. Two comparison groups, comprised of students with similar physical disabilities who have never experienced a career education program were selected. Physically disabled students from two hospital-based schools in the Greater New York area formed one comparison group. Physically disabled students from a prototypic mainstreamed school in the Midwest comprised the second comparison group. Two comparison groups, instead of one larger group, were formed in order to isolate the effects of the mainstreaming experience which is unique to only one school in the sample.

Instrumentation

Three standardized paper-and-pencil test instruments, reflecting the three major themes of the career education program, were selected: 1) The Nowicki-Strickland Locus of Control Scale for Children, reflecting independence; 2) Piers-Harris Children's Self-Concept Scale, measuring self-esteem and; 3) The Attitude component of the Career Maturity Inventory (CMI), assessing career awareness. The CMI is composed of five subscales in career decision-making which were examined separately: 1) Decisiveness, 2) Involvement, 3) Independence, 4) Orientation and 5) Compromise. Because of restrictions imposed by the reading levels needed to complete the Piers-Harris and the CMI, these tests could not be administered to every student in the sample. Thus, the Piers-Harris was administered only to students in grades 4-12; the CMI was administered only to students in grades 9-12. The Nowicki-Strickland is appropriate for students to the kindergarten level and, therefore, was administered to the total sample.

The entire test battery was administered to the subject group pre/post. Pretesting took place at the beginning of the school year, the Fall, 1979, and posttesting was completed toward the end of the school year, the Spring, 1980. Annual follow-up posttesting will be carried out each Spring to monitor the students' developmental growth in the three thematic areas of the program. Due to the relatively high number of students who have changed schools in the comparison groups, especially those in the hospital-based schools, and because of budget constraints, students in the comparison groups were administered the test battery only once.

In addition to these three standardized instruments, evaluation forms and checklists have been developed by project staff to monitor, on an ongoing basis, the progress of specific components of both the Elementary and Secondary Career Education program. For example, an observational checklist was developed for the Speakers' Bureau to monitor the nature of students' questions to the speaker. Similarly, recording forms have been designed for Field Trips and Business Ventures which teachers complete to evaluate the success of these programs and also to identify any problems which may have arisen. Additionally, an evaluation form, completed by the students' work supervisors, has been designed for the Work Experience Program. These formative instruments are used to identify problems as they occur, to refine and/or modify aspects of the program when necessary, and also to monitor students' progress.

Methodology

Analysis of Variance and Covariance, t-tests and correlational techniques were used to assess subject group (HRS students)/ comparison group differences, subject group pre/post differences, and the relationship among variables. Critical independent variables relevant to this analysis included:

group type - subject group/comparison groups

students sex - males/females

grade level - grades were grouped as follows: K-3, 4-6
7-8, 9-12

severity of disability - operationally defined as wheelchair usage.

The dependent variables in this analysis were:

self-concept - as measured by the Piers-Harris

locus of control - as measured by the Nowicki-Strickland

career awareness - as measured by the five subscales of the
CMI

Data from the staff-developed evaluation forms are examined on a continual, individual basis. Successful strategies, problem areas, and potential solutions which are identified by examining these forms are discussed among the research staff, teachers, and occasionally students. Refinements and/or programmatic changes which are determined to be necessary are incorporated into the program as needed.

MEAN TEST SCORES OF CAREER ED. TESTS

<u>TEST</u>	<u>GRADES</u>	<u>HRS</u>		<u>MAINSTREAMED</u>	<u>HOSPITAL BASED</u>	<u>NORMS*</u>
		<u>PRE</u>	<u>POST</u>			
<u>Nowicki-Strickland</u>	K-3	18.70	19.68	19.49	20.36	18.00
<u>Locus of Control</u>	4-6	15.37	15.59	18.67	16.60	16.50
(the lower the score, the	7-8	12.70	11.85	16.38	-	13.00
greater internal control)	9-12	12.64	11.20	14.38	-	12.50
 <u>Piers-Harris</u>	K-3	-	-	-	-	-
<u>Self-Concept</u>	4-6	57.83	61.83	53.33	55.00	53.3
	7-8	60.91	65.09	58.67	-	(Grades
	9-12	59.08	60.52	58.63	-	4-12)
 <u>Career Maturity Inventory:</u>						
<u>Decisiveness In</u>	K-3	-	-	-	-	
<u>Career Decision-Making</u>	4-6	-	-	-	-	
	7-8	6.05	5.22	3.75	-	5.00
	9-12	4.89	4.68	5.13	-	5.37
 <u>Involvement In</u>	K-3	-	-	-	-	
<u>Career Decision-Making</u>	4-6	-	-	-	-	
	7-8	6.50	7.33	6.25	-	8.43
	9-12	8.68	8.29	8.38	-	8.80

MEAN TEST SCORES OF CAREER ED. TEST - PAGE 2

	<u>GRADES</u>	<u>HRS</u>		<u>MAINSTREAMED</u>	<u>HOSPITAL BASED NORMS*</u>	
		<u>PRE</u>	<u>POST</u>			
<u>Independence in</u>	K-3	-	-	-	-	
Career Decision-Making	4-6	-	-	-	-	
	7-8	6.83	8.00	7.75	-	7.75
	9-12	8.26	8.00	8.00	-	8.70
<u>Orientation to</u>	K-3	-	-	-	-	
Career Decision-Making	4-6	-	-	-	-	
	7-8	6.55	7.06	4.13	-	6.50
	9-12	7.55	7.13	6.13	-	7.40
<u>Compromise in</u>	K-3	-	-	-	-	
Career Decision-Making	4-6	-	-	-	-	
	7-8	4.56	4.56	3.25	-	4.75
	9-12	5.08	5.11	4.13	-	5.40

* Norms are approximations and should only be used as guidelines.

<u>SAMPLE SIZE</u>			
<u>GRADES</u>	<u>HRS</u>	<u>MAINSTREAMED</u>	<u>HOSPITAL BASED</u>
K-3	34	15	30
4-6	37	18	5
7-8	22	9	-
9-12	50	8	-

Results

A comparison was first made between the pretest score results of the subject population with results of studies utilizing the same instruments with an able-bodied population. This comparison revealed that the students at Human Resources School are somewhat more externally controlled, are less career mature and, interestingly, have higher self-concepts than their able-bodied peers. The first two findings are as expected. However, the fact that students with disabilities were found to have higher self-concepts than able-bodied students is, on the surface, quite surprising. This finding may be attributed to two possible explanations. Past research using the Piers-Harris has indicated that markedly high self-concept scores do not necessarily reflect a positive self-image (Piers, 1969). The authors of the scale state that such a finding may actually indicate a defense mechanism used by students who in reality have poor self-concepts, yet respond to the test items in a very positive manner in order to mask their true beliefs and to compensate for their low self-esteem. This finding may also be partially due to the fact that the social life of students with disabilities in the subject group consists primarily of interactions with their families and other physically disabled students. Thus, some of the students' responses may be based on comparisons with other disabled students and not with the general population. Further support for this explanation is the fact the the physically disabled students from the mainstreamed school in the comparison group were found to have significantly* lower self-concept scores than the students in the subject group.

*significant at $p \leq .05$ level.

Self-Concept

An Analysis of Covariance procedure, with subject group pretest scores as covariates, indicated that the subject group has significantly* higher self-concepts than both comparison groups. The only significant pre/post subject group difference was found in grades 7-8 in which students evidenced significantly* higher post test self-concept scores than pretest scores.

Again, the effect of severity of disability proved to be significant. Students who use wheelchairs were found to have significantly* higher self-concepts than students who do not use wheelchairs.

Locus of Control

Research with the general population has indicated that locus of control is developmental process (Nowicki & Strickland, 1973). This finding was corroborated. Subject group students in lower grade levels were found to be significantly* more externally controlled, i.e. responsibility for making decisions is influenced by factors outside of the individual, than students in upper grade levels who are more likely to exhibit internally controlled behaviors, i.e. responsibility for making decisions emanates from within the individual.

Subject group students in the high school grades grew significantly* more internally controlled during the interval between pre and post testing. This finding, however, was not replicated for the lower grades.

*significant at $p \leq .05$ level.

Subject group students in grades 4-6 were found to be significantly* more internally controlled than their counterparts in the mainstreamed setting.

Examining the effect of severity of disability surprisingly revealed that students who use wheelchairs are significantly* more internally controlled than students who do not use wheelchairs.

Career Maturity

Career maturity was the sole dimension in which significant sex differences were found. Male students were found to be significantly* more oriented to making career-related decisions than females.

Of the five subscales comprising the CMI, significant differences between the subject group and the comparison groups were found in two. Supporting the major hypothesis of the program, subject group students were found to be significantly* more decisive and more oriented to making career-related decisions than their comparison group peers. However, the three other dimensions of the CMI revealed no significant differences.

Analysis of subject group pre/post differences revealed that students in grades 7-8 became significantly* more independent but, surprisingly, significantly* less decisive when making career-related decisions. No other significant pre/post differences were observed.

*significant at $p < .05$ level.

Severity of disability, again, was found to be a significant effect. Subject group students who use wheelchairs grew significantly* more decisive, more oriented to and more involved in making career-related decisions than students who do not use wheelchairs.

Discussion

Although there exists only inconclusive statistical evidence that the career education program instituted at Human Resources School has impacted significantly on the self-concepts, decision-making ability and career maturity of students with physical disabilities this should not be considered too troublesome. First, partial statistical evidence was found. Secondly, as in most programmatic evaluation studies in naturalistic settings, attribution of a casual relationship between the specific intervention being studied and the results obtained is difficult to establish with certainty. However, our efforts to utilize more than one evaluation strategy have provided convergent evidence for the value of a career education program for students with disabilities.

The results supported but did not confirm the major hypothesis that students with disabilities who have had the experience of a career education program will have higher self-concepts, be more internally controlled and have greater career maturity than students with disabilities who have never had the experience of a career education program. The subject group did demonstrate higher self-concepts than the comparison groups/

*significant a $p < .05$ level.

Although whether these high self-concepts are due to positive self-esteem or are indicative of students with low self-concepts responding in a compensatory manner is a problem which requires further investigation. Subject group students in grades 4-6, also were found to be more internally controlled than comparison group students from the mainstreamed school. Furthermore, the subject group were more career mature than the comparison group in the area of decisiveness and orientation relating to career decision-making. The fact that other significant differences were not found may indicate that students' development in these areas is a gradual process, and any impact that a career education program may have can only be discerned in a longer period of time. Possible long term impact will be investigated via annual administration of the career education test battery. The ultimate evaluation of the program will be determined by the number of students who find employment after completing their education.

Surprisingly, not only did the results not support the second hypothesis that more severely physically disabled students have lower self-concepts, are more externally controlled, and are less career mature than less severely physically disabled students, but evidence for the opposite was found! Students in wheelchairs, the operational definition for severely disabled, have higher self-concepts (again, caution must be exercised in interpreting this), are more internally controlled, and are more decisive, more oriented to and more involved in making career-related decisions than students who do not use wheelchairs.

Upon investigating this finding, it was revealed that in special schools, at least in Human Resources School, where this finding was most predominant, wheelchairs are, in many instances, considered status symbols by students. Wheelchairs offer students much more mobility (even for physically disabled students who may not need to depend on a wheelchair) and provides them with a possession. This fact may explain these results.

One other finding which requires more explanation is the pre/post CMI subject group difference. Although students in grades 7-8 were found to be growing more independently in making career-related decisions they, unexpectedly, were found to be less decisive. Whether this finding is unique to these students, or whether this will occur in future administrations of the CMI, will be investigated. However, it could reflect the developmental stage these students are at. Students in grades 7-8 are still in the "Growth Stage" of career development (Super, 1953) and are becoming more aware of different career options. They may learn to behave more independently, but as their career knowledge grows they may become less decisive about their career futures. Therefore, rather than implying a negative effect, perhaps this finding reflects the students growing awareness of the large number of options that are open to them. Fortunately, they will have four years to assimilate this information before graduating high school and preparing to make their initial career decisions.

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